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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application Number: 10/784,605
Filing Date: February 23, 2004
Appellant(s): LORA ET AL.

Needham James Boddie II
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 02/15/2008 appealing from the Office action mailed 12/20/2007.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

No amendment after final has been filed.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

20020198984	Goldstein	12-2002
20040102925	Giffords	5-2004

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

The following 101 rejections are not being appealed by the Appellants in the appeal brief filed on 2/15/2008.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 50-60 are rejected under 35 U.S.C. 101 as being directed to non-statutory subject matter. The language of the claims raises a question as to whether the claims are directed merely to an environment or machine which would result in a practical application producing a concrete useful, and tangible result to form the basis of statutory subject matter under 35 U.S.C. 101.

Claim 50 is rejected because it includes both tangible and non tangible storage mediums. Applicants' specification recites "the present invention may take the form of a

computer program product on a computer-usable or computer-readable storage medium having computer-usable or computer-readable program code embodied in the medium for use by or in connection with an instruction execution system. In the context of this document, a computer-usable or computer-readable medium may be any medium that can contain, store, communicate, *propagate*, or transport the program for use by or in connection with the instruction execution system, apparatus, or device. The computer-usable or computer-readable medium may be, for example but not limited to, an electronic, magnetic, optical, electromagnetic, infrared, or semiconductor system, apparatus, device, or *propagation medium*." The computer readable storage medium includes computer usable or computer readable medium that can propagate or is a propagation medium. Therefore, the computer usable storage medium of claim 50 includes propagation signals which are non-tangible mediums. Appropriate correction is required.

To expedite a complete examination of the instant application the claims rejected under U.S.C. 101 (nonstatutory) above are further rejected as set forth below in anticipation of application amending these claims to place them within the four categories of invention.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-60 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Goldstein et al**. (**Goldstein** hereinafter) (U.S. PG Pub No. 2002/0198984) in view of **Robert Giffords.** (**Giffords** hereinafter) (U.S. PG Pub No. 2004/0102925).

With respect to claim 1, **Goldstein** teaches **a data storage management system for managing a plurality of remotely located, independent data storage systems, comprising:**

"a central monitoring system located at a geographical location different from a geographical location of each respective remotely located, independent data storage system, wherein the central monitoring system comprises a central data repository" as the monitoring system includes an agent component that monitors the performance of the transactional server as seen from one or more geographic locations and reports the performance data to a reports server and/or centralized database (**Goldstein** Abstract).

"for regarding the status of each of the remotely located, independent data storage systems" as the reports server 36 may optionally be implemented by a "monitoring service provider" entity that stores and provides secure access to server status data for many different transactional servers and business entities; this approach relieves the operator of the transactional server under test from having to administer the reports server 36 (**Goldstein** Paragraph 0076).

"a plurality of remote agent systems, wherein each remote agent system communicates with a respective one of the remotely located data storage systems, wherein each remote agent system collects metadata regarding the data stored at from a respective remotely located data storage system, converts the collected data to a standardized format, and stores the collected data in the central data repository" as the performance data generated by the client and server agents is aggregated in a centralized database that is remotely accessible through a web reports server (**Goldstein** Paragraph 0020). The reports server 36 may optionally be implemented by a "monitoring service provider" entity that stores and provides secure access to server status data for many different transactional servers and business entities (**Goldstein** Paragraph 0076). The agent captures the screen returned by the transactional server and compares this response against any associated verification points defined within the transaction. The screen displays are preferably stored as bitmap images, but may alternatively be stored in another format such as HTML documents and associated objects (**Goldstein** Paragraph 00148 and 0127).

Applicant describes in his specification that metadata is associated with the transactional events and each remote agent system collects data (e.g., metadata) from a respective customer data storage system that relates to the performance/status of the data storage system.

Therefore examiner interprets performance data and status data as metadata being collected from the remote storage systems, which stores transactional data.

Further paragraph 0127 teaches filtering of data according to different attributes i.e. performance data. Therefore performance data is metadata/(data about data) since reports/data are being filtered according to the performance data.

Goldstein teaches the elements of claim 1 as noted above but does not explicitly disclose, **"converts the collected data to a standardized format."**

However**, Giffords** teaches, **"converts the collected data to a standardized format"** as establishing a common representation format for the first performance metric data and the second performance metric data (**Giffords** Abstract).

Giffords figure 1 also teaches a data storage system 10, which includes a plurality of storage systems 12 and performance monitoring system 14. Monitoring system 14 includes a plurality of host agents 30 and a management station 32. Host agents 30 are coupled with respective storage systems 12.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teaching of the cited references because **Giffords's** teachings would have allowed **Goldstein** to provide faster computations, common/standardized formats and remove unnecessary data comparison points.

With respect to claim 2, **Goldstein** teaches **"the data storage management system of claim 1, wherein each remote agent system comprises pattern recognition logic that can identify data patterns that precede fault conditions at a respective remotely located data storage system"** as the agent computers may be

programmed to capture sequences of screen displays during transaction execution, and to transmit these screen displays to the reports server for viewing when a transaction fails. This feature allows the user to view the sequence of events, as "seen" by an agent, that led to the error condition (**Goldstein** Paragraph 0017).

Claim 28 is same as claim 2 and is rejected for the same reasons as applied hereinabove.

With respect to claim 3, **Goldstein** teaches **"the data storage management system of claim 1, wherein storing the collected data in the central data repository"** as the performance data generated by the client and server agents is aggregated in a centralized database that is remotely accessible through a web reports server (**Goldstein** Paragraph 0020). The reports server 36 may optionally be implemented by a "monitoring service provider" entity that stores and provides secure access to server status data for many different transactional servers and business entities (**Goldstein** Paragraph 0076).

"a single remote agent system collects the metadata from its respective remotely located data storage system" as (**Goldstein** Figure 1). The reports server 36 may optionally be implemented by a "monitoring service provider" entity that stores and provides secure access to server status data for many different transactional servers and business entities; this approach relieves the operator of the transactional server under test from having to administer the reports server 36 (**Goldstein** Paragraph

0076). Figure 1 shows specific agents for specific locations and examiner interprets performance data and status data as metadata being collected from the remote storage systems, which stores transactional data.

Goldstein teaches the elements of claim 3 as noted above but does not explicitly teach, **"consolidates the collected data."**

However, **Giffords** discloses, **"consolidates the collected data"** as establishing a common representation format for the first performance metric data and the second performance metric data (**Giffords** Abstract). Examiner interprets combine/converting into single/standardized format as consolidation of the data.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teaching of the cited references because **Giffords's** teachings would have allowed **Goldstein** to provide faster computations, common/standardized formats and remove unnecessary data comparison points.

Claims 16, 29, 40, and 51 are same as claim 3 and are rejected for the same reasons as applied hereinabove.

With respect to claim 4, **Goldstein** teaches **"the data storage management system of claim 1, wherein each remote agent system filters collected data prior to communicating the collected data to the central monitoring system to reduce an amount of data communicated to the central monitoring system"** as by using this feature, the user can, for example, filter out from the reports the performance data

corresponding to a particular transaction, location, organization, ISP, or combination thereof. In one embodiment (not shown), the user specifies the filter to be applied by completing a web form that includes a respective check box for each transaction and each attribute used in the monitoring session (**Goldstein** Paragraph 0127).

Claims 17, 30, 46, and 57 are same as claim 4 and are rejected for the same reasons as applied hereinabove.

With respect to claim 5, **Goldstein** teaches **"the data storage management system of claim 1, wherein each remote agent system comprises action logic that directs the remote agent system to perform one or more corrective actions at a respective remotely located data storage system in response to identifying a data pattern known to precede a fault condition"** as when certain types of server resources are determined by such analysis to be the source of a performance problem, a corrective action is automatically performed according to a set of predefined rules. For instance, a rule may specify that when insufficient disk space available to a particular machine is determined to be the likely source of long transaction response times, additional storage resources are to be automatically allocated to that machine (**Goldstein** Paragraph 0261).

Claims 31, 47, and 58 are same as claim 5 and are rejected for the same reasons as applied hereinabove.

With respect to claim 6, **Goldstein** teaches **"the data storage management system of claim 1, wherein each remote agent system collects data and hardware information from a respective remotely located data storage system"** as a system is provided that automatically analyzes performance data collected by agents to locate performance degradations, and to identify lower level parameters (such as server resource parameters) that are correlated with such degradations (**Goldstein** Paragraph 0021). The agent computer(s) includes in a monitoring session, assign attributes to such computers (such as the location, organization, ISP and/or configuration of each computer) (**Goldstein** Paragraph 0013).

Claims 18, 32, 48, and 59 are same as claim 6 and are rejected for the same reasons as applied hereinabove.

With respect to claim 7, **Goldstein** teaches **the data storage management system of claim 1, wherein each remote agent system comprises:**

"one or more element information managers (EIMs), wherein each EIM is configured to communicate with a respective data source at a remotely located data storage network and convert data from the data source to the standardized format" as the agent captures the screen returned by the transactional server and compares this response against any associated verification points defined within the transaction. The screen displays are preferably stored as bitmap images, but may

alternatively be stored in another format such as HTML documents and associated objects (**Goldstein** Paragraph 00148).

"one or more service information managers (SIMs), wherein each SIM is configured to communicate with EIMs associated with a common data application" and "one or more platform information manager (PIMs), wherein each PIM is configured to communicate with SIMs associated with a common data application platform" as the controller 34 also includes an automation interface 34C that provides methods for controlling the operation of the agents 32, including dispatching testcases and execution schedules to the agents (**Goldstein** Paragraph 0097).

"and an/activity director that is configured to communicate with each EIM, SIM and PIM and to instruct each EIM, SIM and PIM as to what information to collect and store" as (RCA) system is provided that automatically analyzes performance data collected by agents to locate performance degradations, and to identify lower level parameters (such as server resource parameters) that are correlated with such degradations. In a preferred embodiment, the RCA system analyzes the performance data to detect performance or quality degradations in specific parameter measurements (e.g., a substantial increase in average transaction response times) (**Goldstein** Paragraph 0021 & figure 1). In this reference performance data is being collected and stored in a database, which is communicating with the agents.

Goldstein teaches the elements of claim 7 as noted above but does not explicitly teaches **"one or more element information managers (EIMs), wherein each EIM is**

configured to communicate with a respective data source at a remotely located data storage network and convert data from the data source to the standardized format," "one or more service information managers (SIMs), wherein each SIM is configured to communicate with EIMs associated with a common data application" and "one or more platform information manager (PIMs), wherein each PIM is configured to communicate with SIMs associated with a common data application platform."

However, **Giffords** teaches **"one or more element information managers (EIMs), wherein each EIM is configured to communicate with a respective data source at a remotely located data storage network and convert data from the data source to the standardized format"** as establishing a common representation format for the first performance metric data and the second performance metric data (**Giffords** Abstract).

"one or more service information managers (SIMs), wherein each SIM is configured to communicate with EIMs associated with a common data application and one or more platform information manager (PIMs), wherein each PIM is configured to communicate with SIMs associated with a common data application platform" as host agents 30 are coupled with respective storage systems 12 and are configured to interface with managers 22 of the respective storage systems 12, for example, using API calls (**Giffords** Paragraph 0021).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teaching of the cited references because **Giffords's**

teachings would have allowed **Goldstein** to provide faster computations, common/standardized formats and remove unnecessary data comparison points.

Claims 19, 49, and 60 are same as claim 7 and are rejected for the same reasons as applied hereinabove.

With respect to claim 8, **Goldstein** does not explicitly teach, **"the data storage management system of claim 1, wherein each remotely located data storage system comprises one or more data storage devices."**

However, **Giffords** teaches **"the data storage management system of claim 1, wherein each remotely located data storage system comprises one or more data storage devices"** as for example, storage systems 12 may be arranged as RAID storage systems, direct attached systems, network attached systems, and/or storage area network systems in exemplary embodiments (**Giffords** Paragraph 0018).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teaching of the cited references because **Giffords's** teachings would have allowed **Goldstein** to provide faster computations, common/standardized formats and remove unnecessary data comparison points.

Claims 20 and 33 are same as claim 8 and are rejected for the same reasons as applied hereinabove.

With respect to claim 9, **Goldstein** does not explicitly teach **"the data storage management system of claim 8, wherein the one or more data storage devices comprise a plurality of heterogeneous data storage devices."**

However, **Giffords** discloses **"the data storage management system of claim 8, wherein the one or more data storage devices comprise a plurality of heterogeneous data storage devices"** as for example, storage systems 12 may be arranged as RAID storage systems, direct attached systems, network attached systems, and/or storage area network systems in exemplary embodiments (**Giffords** Paragraph 0018).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teaching of the cited references because **Giffords's** teachings would have allowed **Goldstein** to provide faster computations, common/standardized formats and remove unnecessary data comparison points.

Claims 21 and 34 are same as claim 9 and are rejected for the same reasons as applied hereinabove.

With respect to claim 10, **Goldstein** teaches **"the data storage management system of claim 1, wherein the central monitoring system is configured to communicate corrective action information to each respective remote agent system and wherein each remote agent system is configured to implement the corrective action in response thereto"** as when certain types of server resources are

determined by such analysis to be the source of a performance problem, a corrective action is automatically performed according to a set of predefined rules. For instance, a rule may specify that when insufficient disk space available to a particular machine is determined to be the likely source of long transaction response times, additional storage resources are to be automatically allocated to that machine (**Goldstein** Paragraph 0261).

Claims 22, 35, 45, and 56 are same as claim 10 and are rejected for the same reasons as applied hereinabove.

With respect to claim 11, **Goldstein** teaches **"the data storage management system of claim 1, wherein the central monitoring system is configured to communicate corrective action information to a third party for implementation"** as when certain types of server resources are determined by such analysis to be the source of a performance problem, a corrective action is automatically performed according to a set of predefined rules. For instance, a rule may specify that when insufficient disk space available to a particular machine is determined to be the likely source of long transaction response times, additional storage resources are to be automatically allocated to that machine (**Goldstein** Paragraph 0261). Performance problems discovered through the testing process may be corrected by programmers or system administrators (**Goldstein** Paragraph 0006).

Claims 23, 36, 44, and 55 are same as claim 11 and are rejected for the same reasons as applied hereinabove.

With respect to claim 12, **Goldstein** teaches **"the data storage management system of claim 1, wherein the central monitoring system is configured to analyze information from each remote agent system and identify patterns known to precede data storage problems at a respective remotely located data storage system"** as the agent computers may be programmed to capture sequences of screen displays during transaction execution, and to transmit these screen displays to the reports server for viewing when a transaction fails. This feature allows the user to view the sequence of events, as "seen" by an agent, that led to the error condition (**Goldstein** Paragraph 0017).

Claims 24, 37, 42-43, and 53-54 are same as claim 12 and are rejected for the same reasons as applied hereinabove.

With respect to claim 13, **Goldstein** teaches **"the data storage management system of claim 1, further comprising a plurality of customer portals, each customer portal associated with a respective one of the remotely located data storage systems and with the central monitoring system, wherein each customer portal provides user access to information about a respective one of the remotely located data storage systems"** as the RCA system 168, which is accessible to users

through a browser 100 or other user device such as an Internet-enabled handheld device (not shown). RCA system 168 in this embodiment include a RCA Internet server 268, a RCA application server 270, and a database bank 272 accessible to the RCA system 168. In the illustrated embodiment, the RCA system 168 may be shared by many different users or customers of a hosted monitoring service, and may thus be used concurrently to analyze the performance of many different web sites or other systems. The RCA system 168 may alternatively be set up, for example, on a corporate network and used exclusively for analyzing the server system(s) of a particular organization (**Goldstein** Paragraph 0226).

Claim 25 is same as claim 13 and is rejected for the same reasons as applied hereinabove.

With respect to claim 14, **Goldstein** teaches **"the data storage management system of claim 13, wherein each customer portal allows user control and configuration of a remotely located data storage system"** as the RCA system 168, which is accessible to users through a browser 100 or other user device such as an Internet-enabled handheld device (not shown). RCA system 168 in this embodiment include a RCA Internet server 268, a RCA application server 270, and a database bank 272 accessible to the RCA system 168. In the illustrated embodiment, the RCA system 168 may be shared by many different users or customers of a hosted monitoring

service, and may thus be used concurrently to analyze the performance of many different web sites or other systems (**Goldstein** Paragraph 0226).

Claims 26 and 38 are same as claim 14 and are rejected for the same reasons as applied hereinabove.

With respect to claim 15, **Goldstein** teaches **a data storage management system for managing a plurality of remotely located, independent data storage systems, comprising:**

"a central monitoring system located at a geographical location different from a geographical location of each respective remotely located, independent data storage system, wherein the central monitoring system comprises a central data repository" as the monitoring system includes an agent component that monitors the performance of the transactional server as seen from one or more geographic locations and reports the performance data to a reports server and/or centralized database (**Goldstein** Abstract).

"for regarding the status of each of the remotely located, independent data storage systems" as the reports server 36 may optionally be implemented by a "monitoring service provider" entity that stores and provides secure access to server status data for many different transactional servers and business entities; this approach relieves the operator of the transactional server under test from having to administer the reports server 36 (**Goldstein** Paragraph 0076).

"and a plurality of remote agent systems, wherein each remote agent system communicates with a respective one of the remotely located data storage systems, wherein each remote agent system collects metadata regarding the data stored at a respective remotely located data storage system, converts the collected data to a standardized format, and stores the collected data in the central data repository" as the performance data generated by the client and server agents is aggregated in a centralized database that is remotely accessible through a web reports server (**Goldstein** Paragraph 0020). The reports server 36 may optionally be implemented by a "monitoring service provider" entity that stores and provides secure access to server status data for many different transactional servers and business entities (**Goldstein** Paragraph 0076). The agent captures the screen returned by the transactional server and compares this response against any associated verification points defined within the transaction. The screen displays are preferably stored as bitmap images, but may alternatively be stored in another format such as HTML documents and associated objects (**Goldstein** Paragraph 00148). Examiner interprets performance data and status data as metadata being collected from the remote storage systems, which stores transactional data.

"wherein each remote agent system comprises pattern recognition logic that can identify data patterns that precede fault conditions at a respective remotely located data storage system" as the agent computers may be programmed to capture sequences of screen displays during transaction execution, and to transmit these screen displays to the reports server for viewing when a transaction fails. This

feature allows the user to view the sequence of events, as "seen" by an agent, that led to the error condition (**Goldstein** Paragraph 0017).

"and wherein each remote agent system comprises action logic that directs the remote agent system to perform one or more corrective actions at a respective remotely located data storage system in response to identifying a data pattern known to precede a fault condition" as when certain types of server resources are determined by such analysis to be the source of a performance problem, a corrective action is automatically performed according to a set of predefined rules. For instance, a rule may specify that when insufficient disk space available to a particular machine is determined to be the likely source of long transaction response times, additional storage resources are to be automatically allocated to that machine (**Goldstein** Paragraph 0261).

Goldstein teaches the elements of claim 15 as noted above but does not explicitly disclose, **"converts the collected data to a standardized format."**

However, **Giffords** teaches, **"converts the collected data to a standardized format"** as establishing a common representation format for the first performance metric data and the second performance metric data (**Giffords** Abstract).

Giffords's figure 1 also teaches a data storage system 10, which includes a plurality of storage systems 12 and performance monitoring system 14. Monitoring system 14 includes a plurality of host agents 30 and a management station 32. Host agents 30 are coupled with respective storage systems 12.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teaching of the cited references because **Giffords's** teachings would have allowed **Goldstein** to provide faster computations, common/standardized formats and remove unnecessary data comparison points.

Claims 39, 41, 50, and 52 are same as claim 15 and are rejected for the same reasons as applied hereinabove.

With respect to claim 27, **Goldstein** teaches **a data storage management system for managing a plurality of remotely located, independent data storage systems, comprising:**

"a central monitoring system located at a geographical location different from a geographical location of each respective remotely located, independent data storage system, wherein the central monitoring system comprises a central data repository" as the monitoring system includes an agent component that monitors the performance of the transactional server as seen from one or more geographic locations and reports the performance data to a reports server and/or centralized database (**Goldstein** Abstract).

"for regarding the status of each of the remotely located, independent data storage systems" as the reports server 36 may optionally be implemented by a "monitoring service provider" entity that stores and provides secure access to server status data for many different transactional servers and business entities; this approach

relieves the operator of the transactional server under test from having to administer the reports server 36 (**Goldstein** Paragraph 0076).

"a plurality of remote agent systems, wherein each remote agent system communicates with a respective one of the remotely located data storage systems, wherein each remote agent system collects metadata regarding the data stored a respective remotely located data storage system, converts the collected data to a standardized format, and stores the collected data in the central data repository, wherein each remote agent system comprises" as the performance data generated by the client and server agents is aggregated in a centralized database that is remotely accessible through a web reports server (**Goldstein** Paragraph 0020). The reports server 36 may optionally be implemented by a "monitoring service provider" entity that stores and provides secure access to server status data for many different transactional servers and business entities (**Goldstein** Paragraph 0076). The agent captures the screen returned by the transactional server and compares this response against any associated verification points defined within the transaction. The screen displays are preferably stored as bitmap images, but may alternatively be stored in another format such as HTML documents and associated objects (**Goldstein** Paragraph 00148). Examiner interprets performance data and status data as metadata being collected from the remote storage systems, which stores transactional data.

"one or more element information managers (EIMs), wherein each EIM is configured to communicate with a respective data source at a remotely located data storage network and convert data from the data source to the standardized

format" as the agent captures the screen returned by the transactional server and compares this response against any associated verification points defined within the transaction. The screen displays are preferably stored as bitmap images, but may alternatively be stored in another format such as HTML documents and associated objects (**Goldstein** Paragraph 00148).

"one or more service information managers (SIMs), wherein each SIM is configured to communicate with EIMs associated with a common data application; one or more platform information manager (PIMs), wherein each PIM is configured to communicate with SIMs associated with a common data application platform" as the controller 34 also includes an automation interface 34C that provides methods for controlling the operation of the agents 32, including dispatching testcases and execution schedules to the agents (**Goldstein** Paragraph 0097).

"and an activity director that is configured to communicate with each EIM, SIM and PIM and to instruct each EIM, SIM and PIM as to what information to collect and store" as (RCA) system is provided that automatically analyzes performance data collected by agents to locate performance degradations, and to identify lower level parameters (such as server resource parameters) that are correlated with such degradations. In a preferred embodiment, the RCA system analyzes the performance data to detect performance or quality degradations in specific parameter measurements (e.g., a substantial increase in average transaction response times)

(**Goldstein** Paragraph 0021 & figure 1). In this reference performance data is being collected and stored in a database, which is communicating with the agents.

"and a plurality of customer portals, each customer portal associated with a respective one of the remotely located data storage systems and with the central monitoring system, wherein each customer portal provides user access to information about a respective one of the remotely located data storage systems" as the RCA system 168, which is accessible to users through a browser 100 or other user device such as an Internet-enabled handheld device (not shown). RCA system 168 in this embodiment include a RCA Internet server 268, a RCA application server 270, and a database bank 272 accessible to the RCA system 168. In the illustrated embodiment, the RCA system 168 may be shared by many different users or customers of a hosted monitoring service, and may thus be used concurrently to analyze the performance of many different web sites or other systems. The RCA system 168 may alternatively be set up, for example, on a corporate network and used exclusively for analyzing the server system(s) of a particular organization (**Goldstein** Paragraph 0226).

Goldstein teaches the elements of claim 27 as noted above but does not explicitly discloses **"converts the collected data to a standardized format," "one or more element information managers (EIMs), wherein each EIM is configured to communicate with a respective data source at a remotely located data storage network and convert data from the data source to the standardized format," "one or more service information managers (SIMs), wherein each SIM is configured to communicate with EIMs associated with a common data application" and "one or**

more platform information manager (PIMs), wherein each PIM is configured to communicate with SIMs associated with a common data application platform."

However, **Giffords** teaches, **"converts the collected data to a standardized format and one or more element information managers (EIMs), wherein each EIM is configured to communicate with a respective data source at a remotely located data storage network and convert data from the data source to the standardized format"** as establishing a common representation format for the first performance metric data and the second performance metric data (**Giffords** Abstract).

"one or more service information managers (SIMs), wherein each SIM is configured to communicate with EIMs associated with a common data application and one or more platform information manager (PIMs), wherein each PIM is configured to communicate with SIMs associated with a common data application platform" as host agents 30 are coupled with respective storage systems 12 and are configured to interface with managers 22 of the respective storage systems 12, for example, using API calls (**Giffords** Paragraph 0021).

Giffords's figure 1 also teaches a data storage system 10, which includes a plurality of storage systems 12 and performance monitoring system 14. Monitoring system 14 includes a plurality of host agents 30 and a management station 32. Host agents 30 are coupled with respective storage systems 12.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teaching of the cited references because **Giffords's**

teachings would have allowed **Goldstein** to provide faster computations, common/standardized formats and remove unnecessary data comparison points.

(10) Response to Argument

A. § 103(a) rejection of claims 1-60 over Goldstein in view of Gifford.

Appellant argues that **Goldstein and Giffords** do not disclose or suggest **"1. system for managing a plurality of remotely located, independent data storage systems, 2. each remote agent collects metadata regarding the data stored"** as required by independent claim 1.

In response to the preceding arguments examiner respectfully submits that **Goldstein** teaches **"system for managing a plurality of remotely located, independent data storage systems"** as the monitoring system includes an agent component that monitors the performance of the transactional server as seen from one or more geographic locations and reports the performance data to a reports server and/or centralized database (**Goldstein** Abstract).

The reports server 36 may optionally be implemented by a "monitoring service provider" entity that stores and provides secure access to server status data for many different transactional servers and business entities (**Goldstein** Paragraph 0076).

Therefore, these lines teach a monitoring system that monitors different transactional servers, which examiner interprets as a data storage system since the transactional server stores transaction data.

Further **Giffords** teaches in FIG. 1, an exemplary data storage system 10 is illustrated. The depicted data storage system 10 includes a plurality of storage systems 12 and a performance monitoring system 14. Exemplary storage systems 12 shown in FIG. 1 include respective storage areas 20 and respective managers 22. Although two storage systems 12 are shown in FIG. 1, data storage system 10 may include additional storage systems 12. One of storage systems 12 may be referred to as a first storage system 16 and the other of storage systems 12 may be referred to as a second storage system 18. In one arrangement, storage systems 12 comprise independent mass storage systems configured to store digital data independent from one another (**Giffords** Paragraph 0018).

*Therefore, **Giffords's** figure 1 shown below also teaches remote storage systems 16 and 18 with remote storage agents which communicate with the central monitoring system/ management station.*

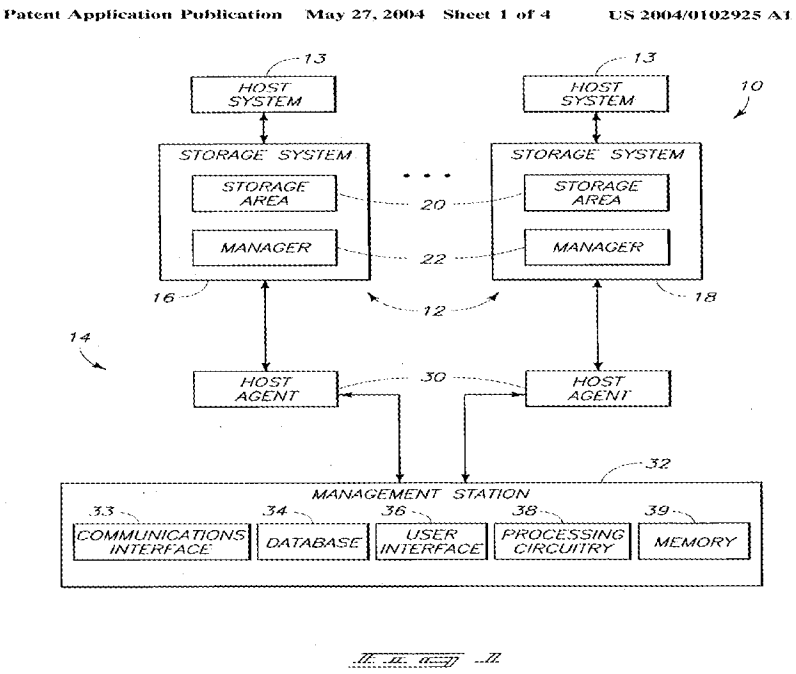


Fig. 1 (Prior Art)

Further, examiner respectfully submits that **Goldstein** teaches **"each remote agent collects metadata regarding the data stored"** as the performance data generated by the client and server agents is aggregated in a centralized database that is remotely accessible through a web reports server (**Goldstein** Paragraph 0020). The reports server 36 may optionally be implemented by a "monitoring service provider" entity that stores and provides secure access to server status data for many different transactional servers and business entities; this approach relieves the operator of the transactional server under test from having to administer the reports server 36 (**Goldstein** Paragraph 0076).

Therefore, these lines teach that performance data is being generated by server agents which are located at remote locations to collect data from different transactional servers.

Applicant describes in his specification gathering of metadata that is associated with the transactional events (paragraph 0053) and each remote agent system collects data (e.g., metadata) from a respective customer data storage system that relates to the performance/status of the data storage system (Abstract).

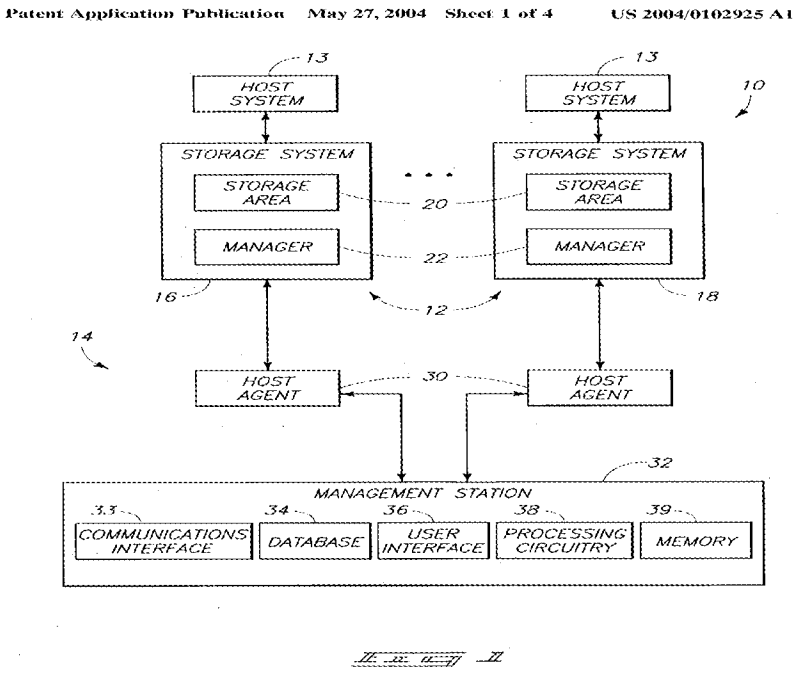
Therefore examiner interprets performance data and status data as metadata being collected from the remote storage systems, which stores transactional data.

Further paragraph 0127 teaches filtering of data according to different attributes i.e. performance data. Therefore performance data is metadata/(data about data) since reports/data are being filtered according to the performance data.

Further **Giffords** also teaches a storage system performance metric comparison method includes accessing first performance metric data comprising a plurality of data values with respect to a first storage system configured to store digital data, accessing second performance metric data comprising a plurality of data values with respect to a second storage system configured to store digital data, establishing a common representation format for the first performance metric data and the second performance metric data (**Giffords** Abstract).

Giffords's figure 1 shown below teaches remote storage systems with remote storage agents which communicate with the central monitoring system/ management

station. Gifford also teaches performance data/metadata about the different storage systems, which store digital data.



Regarding claims 2 and 5, Appellant argues that **Goldstein** does not teaches **"wherein each remote agent system comprises pattern recognition logic that can identify data patterns that precede fault conditions at a respective remotely located data storage system and each remote agent system comprises action logic that directs the remote agent system to perform one or more corrective action at a respectively remotely located storage system."**

In response to the preceding argument examiner respectfully submits that Goldstein teaches **"wherein each remote agent system comprises pattern recognition logic that can identify data patterns that precede fault conditions at a respective remotely located data storage system"** as the agent computers may be programmed to capture sequences of screen displays during transaction execution, and to transmit these screen displays to the reports server for viewing when a transaction fails. This feature allows the user to view the sequence of events, as "seen" by an agent, that led to the error condition (**Goldstein** Paragraph 0017).

Further, **Goldstein** teaches a function could be provided for ensuring that at least two agent computers 40 are scheduled to execute testcases at all times, so that the failure of a single agent computer will not cause the transactional server to go unmonitored (**Goldstein** Paragraph 0113). The Alerts Wizard may also provide an option (not illustrated) to be notified when certain types of transactions fail, and/or when failures are detected within particular attribute groups (**Goldstein** Paragraph 0117).

Therefore Goldstein has test scripts uploaded to the server, which are monitoring transaction servers for any alarm conditions.

"each remote agent system comprises action logic that directs the remote agent system to perform one or more corrective actions at a respective remotely located data storage system in response to identifying a data pattern known to precede a fault condition" as when certain types of server resources are determined by such analysis to be the source of a performance problem, a corrective action is automatically performed according to a set of predefined rules. For instance, a rule may

specify that when insufficient disk space available to a particular machine is determined to be the likely source of long transaction response times, additional storage resources are to be automatically allocated to that machine (**Goldstein** Paragraph 0261).

A corrective action is being performed according to the problem that has been determined.

Regarding claim 3, Appellant argues that **Goldstein** does not teaches **"a single remote agent system collects the metadata from its respective remotely located data storage system."**

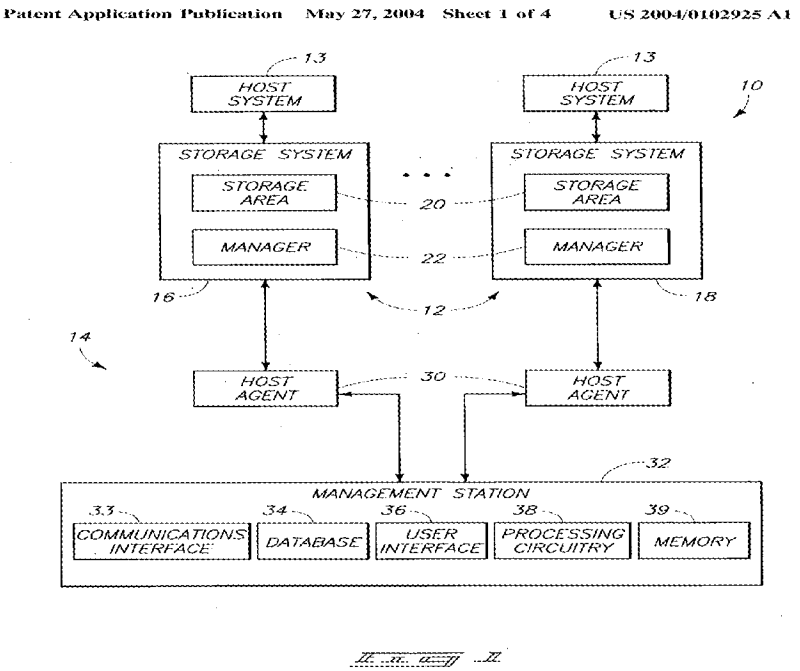
In response to the preceding argument examiner respectfully submits that **Goldstein** teaches **"a single remote agent system collects the metadata from its respective remotely located data storage system"** as (**Goldstein** Figure 1). The reports server 36 may optionally be implemented by a "monitoring service provider" entity that stores and provides secure access to server status data for many different transactional servers and business entities; this approach relieves the operator of the transactional server under test from having to administer the reports server 36 (**Goldstein** Paragraph 0076).

Figure 1 shows specific agents for specific locations and examiner interprets performance data and status data as metadata being collected from the remote storage systems, which stores transactional data.

A set of one or more agents 32 access the web site or other transactional server 30 from one or more geographic locations, and report response times and other

performance parameters to a sessions database 42, preferably as described in the previous sections (**Goldstein** Paragraph 0173).

Further Giffords also teaches in his figure 1 shown below, a single agent for a data storage system.



Regarding claim 4, Appellant argues that **Goldstein** does not teach **"each remote agent system filters collected data prior to communicating the collected data."**

In response to the preceding argument examiner respectfully submits that **Goldstein** teaches **"each remote agent system filters collected data prior to communicating**

the collected data" as by using this feature, the user can, for example, filter out from the reports the performance data corresponding to a particular transaction, location, organization, ISP, or combination thereof. In one embodiment (not shown), the user specifies the filter to be applied by completing a web form that includes a respective check box for each transaction and each attribute used in the monitoring session (Goldstein Paragraph 0127). The agents 32 could be configured to "filter" the transaction execution data, so that only those transactions that meet certain predefined criteria are reported. These and other alternatives could optionally be provided as user-configurable options (Goldstein Paragraph 0143).

These lines teach that the collected data being filtered by the agent so that only the data that meets the criteria is being transmitted which also reduces the amount of data being transmitted.

Regarding claim 7, Appellant argues that **Goldstein** does not teaches **"one or more element information managers (EIMs), wherein each EIM is configured to communicate with a respective data source at a remotely located data storage network and convert data from the data source to the standardized format," "one or more service information managers (SIMs), wherein each SIM is configured to communicate with EIMs associated with a common data application" and "one or more platform information manager (PIMs), wherein each PIM is configured to communicate with SIMs associated with a common data application platform" "and an/activity director that is configured to communicate with each EIM, SIM**

and PIM and to instruct each EIM, SIM and PIM as to what information to collect and store."

In response to the preceding arguments examiner respectfully submits that Goldstein teaches **"one or more element information managers (EIMs), wherein each EIM is configured to communicate with a respective data source at a remotely located data storage network and convert data from the data source to the standardized format"** as the agent captures the screen returned by the transactional server and compares this response against any associated verification points defined within the transaction. The screen displays are preferably stored as bitmap images, but may alternatively be stored in another format such as HTML documents and associated objects (Goldstein Paragraph 00148).

"one or more service information managers (SIMs), wherein each SIM is configured to communicate with EIMs associated with a common data application" and "one or more platform information manager (PIMs), wherein each PIM is configured to communicate with SIMs associated with a common data application platform" as the controller 34 also includes an automation interface 34C that provides methods for controlling the operation of the agents 32, including dispatching testcases and execution schedules to the agents (**Goldstein** Paragraph 0097).

"and an/activity director that is configured to communicate with each EIM, SIM and PIM and to instruct each EIM, SIM and PIM as to what information to collect and store" as (RCA) system is provided that automatically analyzes

performance data collected by agents to locate performance degradations, and to identify lower level parameters (such as server resource parameters) that are correlated with such degradations. In a preferred embodiment, the RCA system analyzes the performance data to detect performance or quality degradations in specific parameter measurements (e.g., a substantial increase in average transaction response times) (**Goldstein** Paragraph 0021 & figure 1).

In this reference performance data is being collected and stored in a database, by RCA, which examiner interprets as an activity director and is communicating with the agents.

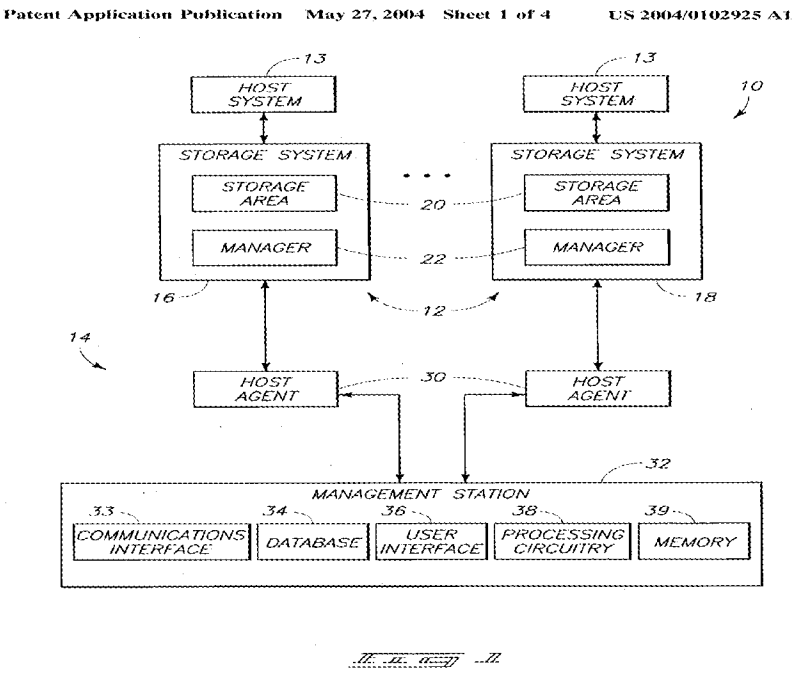
Further **Giffords** also teaches **"one or more element information managers (EIMs), wherein each EIM is configured to communicate with a respective data source at a remotely located data storage network and convert data from the data source to the standardized format"** as establishing a common representation format for the first performance metric data and the second performance metric data (**Giffords** Abstract). **"one or more service information managers (SIMs), wherein each SIM is configured to communicate with EIMs associated with a common data application and one or more platform information manager (PIMs), wherein each PIM is configured to communicate with SIMs associated with a common data application platform"** as host agents 30 are coupled with respective storage systems 12 and are configured to interface with managers 22 of the respective storage systems 12, for example, using API calls (**Giffords** Paragraph 0021).

All the steps of claim 7 are performing the same functionality as being performed in the independent claim 1, therefore reasoning applied to claim 1 is also applied to the rejections of claim 7.

Regarding claim 8 and 9, Appellant argues that **Goldstein and Giffords** do not teach **"each remotely located data storage system comprises one or more data storage devices."**

In response to the preceding arguments examiner respectfully submits that **Gifford** teaches **"each remotely located data storage system comprises one or more data storage devices"** as for example, storage systems 12 may be arranged as RAID storage systems, direct attached systems, network attached systems, and/or storage area network systems in exemplary embodiments (**Giffords** Paragraph 0018).

Further, figure 1 shown below also discloses one or more storage devices located at a storage system.



Further, Appellant argues regarding claims 10 and 12 that Goldstein and Gifford do not teach **"each remote agent system is configured to implement the corrective action" and "the central monitoring system is configured to analyze information from each remote agent system and identify patterns known to precede data storage problems at a respective remotely located data storage system."**

In response to the preceding arguments examiner respectfully submits that **Goldstein** teaches **"each remote agent system is configured to implement the corrective action"** as when certain types of server resources are determined by such analysis to be the source of a performance problem, a corrective action is automatically

performed according to a set of predefined rules. For instance, a rule may specify that when insufficient disk space available to a particular machine is determined to be the likely source of long transaction response times, additional storage resources are to be automatically allocated to that machine (**Goldstein** Paragraph 0261). Figure 26 shows that the agent implements corrective actions suggested by RCA to the agent.

"the central monitoring system is configured to analyze information from each remote agent system and identify patterns known to precede data storage problems at a respective remotely located data storage system" as the agent computers may be programmed to capture sequences of screen displays during transaction execution, and to transmit these screen displays to the reports server for viewing when a transaction fails. This feature allows the user to view the sequence of events, as "seen" by an agent, that led to the error condition (**Goldstein** Paragraph 0017). Further, **Goldstein** teaches a function could be provided for ensuring that at least two agent computers 40 are scheduled to execute testcases at all times, so that the failure of a single agent computer will not cause the transactional server to go unmonitored (**Goldstein** Paragraph 0113). The Alerts Wizard may also provide an option (not illustrated) to be notified when certain types of transactions fail, and/or when failures are detected within particular attribute groups (**Goldstein** Paragraph 0117).

Therefore, Goldstein has test scripts uploaded to the server, which are monitoring transaction servers for any alarm conditions.

Regarding claim 14, Appellant argues that **Goldstein** does not teach **"each customer portal allows user control and configuration of a remotely located data storage system."**

In response to the preceding arguments examiner respectfully submits that Goldstein teaches **"each customer portal allows user control and configuration of a remotely located data storage system"** as the RCA system 168, which is accessible to users through a browser 100 or other user device such as an Internet-enabled handheld device (not shown). RCA system 168 in this embodiment include a RCA Internet server 268, a RCA application server 270, and a database bank 272 accessible to the RCA system 168. In the illustrated embodiment, the RCA system 168 may be shared by many different users or customers of a hosted monitoring service, and may thus be used concurrently to analyze the performance of many different web sites or other systems (**Goldstein** Paragraph 0226).

The customer portal such as handheld device using a browser provides the reports server with various user-configurable charts and graphs that allow the operator of the transactional server to view the performance data associated with each transaction.

Appellant's arguments directed towards the rejections of claim 15-60 reiterate deficiencies Appellant made in the rejection of the claims 1-14 and do not address any new points. Therefore examiner submits that if the rejection of the claims 1-14 is deemed proper, the rejection of claims 15-60 should also be upheld.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

/Usmaan Saeed/

Usmaan Saeed

Examiner

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